

1           37. A method for controlling the texture of an alloy, comprising  
2           the steps of:

3           defining equal channel angular extrusion routes for defining  
4           predetermined shear planes and crystallographic directions in the alloy;

5           selecting at least a route from the defined routes for plastically  
6           deforming the alloy during equal channel angular extrusion; and

7           subjecting the alloy to a predetermined number of passes through  
8           the selected routes.

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10          38. An alloy produced by the method of claim 37 comprising a  
11          randomized microstructure and a texture with a substantially uniform  
12          grain size.

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14          39. An alloy produced by the method of claim 37 comprising a  
15          strong texture.

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17          40. An alloy produced by the method of claim 37 comprising  
18          substantially random textures.

1           41. A method for controlling the texture of an alloy, comprising  
2           the steps of:

3           defining equal channel angular extrusion routes for defining  
4           predetermined shear planes and crystallographic directions in the alloy;

5           selecting at least one route from the defined routes for processing  
6           the alloy;

7           processing the alloy through the selected at least one route; and

8           recovery annealing the alloy at a temperature range and a time  
9           period determined for the alloy for obtaining substantially uniform grain  
10          size, global microstructure and texture.

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12          42. A method for influencing the texture evolution of an alloy,  
13          comprising the steps:

14           defining equal channel angular extrusion routes for defining  
15           predetermined shear planes and crystallographic directions in the alloy;

16           selecting at least one route from the defined routes for processing  
17           the alloy;

18           processing the alloy through the selected at least one route;

19           recovery annealing the alloy at a temperature range and a time  
20           period determined for the alloy; and

21           further recovery annealing the alloy at a temperature greater than  
22           maximum temperature of the temperature range.

1           43. A method for controlling the texture of an alloy, comprising  
2           the steps of:

3           defining equal channel angular extrusion routes for defining  
4           predetermined shear planes and crystallographic directions in the alloy;

5           selecting at least one route from the defined routes for processing  
6           the alloy;

7           processing the alloy through the selected at least one route; and

8           post-extrusion processing the alloy to create a specific texture, a  
9           uniform grain size and a high texture strength for the alloy.

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11           44. A method for controlling the texture of an alloy, which  
12           comprises the steps of:

13           defining equal channel angular extrusion routes for defining  
14           predetermined shear planes and crystallographic directions in the alloy;

15           selecting at least one route from the defined routes for processing  
16           the alloy;

17           processing the alloy through the selected at least one route; and

18           further processing the alloy under equal channel angular extrusion  
19           in order to create a specific texture, a uniform grain size and a high  
20           texture strength for the alloy.